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Emersion.

Name of Star.	G.M.T. when first seen. h m s	Remarks.
Anon.	11 11 17·2	Possibly some confusion with B.D. 22° No. 1368.
B.D. 22° No. 1369	11 12 49·9	
23 1389	11 25 40·3	
Anon.	11 50 22·8	Should have been seen earlier.
B.D. 23° No. 1407	12 6 29·1	Very well seen.
23 1402	12 9 31·6	
22 1385	12 18 48·1	Left a satisfactory impression of accuracy.
23 1403	12 18 58·1	

Liverpool Observatory:
1899 *January* 10.

Observations of Eros (1898 *DQ*), *made at the Royal Observatory, Greenwich, with the* 30-*inch Reflector of the Thompson Equatorial.*

(*Communicated by the Astronomer Royal.*)

Two photographs of this planet were obtained with the 30-inch reflector on 1899 January 10. The electric hand-control was used to diminish the trail of the planet in Right Ascension. In the first photograph this was not effected very satisfactorily, and though the planet is shown plainly the trails of the stars are not uniform. In the second photograph two exposures of five minutes and four minutes respectively were given, and the images of both stars and planet are good. The second photograph only has been measured in the astrographic simplex micrometer. Four measures were made of each image of the planet by one observer, and two of each of the reference stars in reversed positions of the plate.

The positions of the reference stars were obtained from the catalogue of the *Astronomische Gesellschaft* Albany, and Leipzig II. Zones, the latter being kindly communicated in manuscript by Professor Bruns, the director of the Leipzig Observatory. Rectangular coordinates were computed from these and compared with the measures; linear corrections of the form $ax+by+c$ and $dx+ey+f$ were deduced and applied to the measured coordinates of the planet and reference stars.

The apparent position of the planet thus obtained is :—

Date.	G.M.T.	App. R.A.	App. Dec.	log. Δ.	Cor. for Par R.A.	Cor. for Par Dec.
	h m s	h m s	° ′ ″		s	″
1899 Jan. 10	6 11 27	23 14 30·31	5 38 58·8	0·1890	+0·14	+4·15

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The resulting corrections to the ephemeris given by M. Fayet in *Astr. Nachr.*, No. 3538, are

R.A.	Dec.
s	"
+2·05	+17·7.

The following table gives the assumed places of the reference stars and the apparent corrections obtained from the measures of the photograph :—

Zone and No. in B.D.	Mag.	Assumed R.A. 1899·0.	Appar. Cor.	Assumed Dec. 1899·0.	Appar. Cor.	Approx. Distance of Star from Centre of Plate.
°		h m s	s	° ' "	"	'
5·5152	8·8	23 11 12·06	0·00	+6 2 17·7	0·0	58
5·5153	8·8	23 11 18·30	+ ·11	+6 0 6·5	+0·7	56
4·4989	8·8	23 11 59·38	− ·03	+4 53 30·1	+1·3	61
5·5154	9·2	23 12 5·71	− ·12	+5 18 4·3	−0·2	44
6·5139	9·0	23 12 8·53	+ ·09	+6 33 59·4	−0·1	68
5·5155	9·0	23 12 26·41	− ·07	+5 58 46·1	+0·7	40
4·4991	9·1	23 13 37·47	− ·01	+4 54 7·8	+0·6	47
4·4994	8·0	23 13 43·27	− ·05	+4 51 22·9	−0·1	50
6·5141	7·2	23 14 12·59	+ ·08	+6 39 45·9	−0·5	63
5·5157	8·5	23 14 20·65	+ ·01	+5 20 1·0	−1·7	19
5·5158	9·1	23 14 35·27	− ·04	+5 18 1·0	−1·5	20
4·4995	8·9	23 14 58·66	− ·07	+5 5 41·1	−0·6	32
4·4996	9·0	23 15 1·42	+ ·02	+4 45 43·7	+1·2	53
6·5143	8·6	23 15 11·37	− ·09	+6 19 7·5	+0·8	42
6·5145	8·6	23 16 6·73	+ ·01	+6 25 52·4	−0·3	52
5·5160	9·0	23 16 42·44	·00	+6 8 32·1	−0·2	42
6·5146	9·6	23 16 43·88	− ·04	+6 41 5·1	−0·4	70
4·4998	8·7	23 16 54·74	+ ·08	+4 57 3·8	+1·6	52
5·5161	8·6	24 17 13·17	− ·02	+6 5 50·5	−0·8	46
4·4999	8·9	23 17 19·50	+ ·08	+4 56 48·9	−0·3	56
5·5162	9·0	23 17 51·71	+ ·03	+5 59 50·5	0·0	51
4·5002	9·6	23 17 58·39	+ ·05	+5 3 21·2	−0·7	59
Mean.		23 14 43		+5 39 42		

The approximate centre of the plate is at R.A. $23^h\ 14^m\ 45^s$. Dec. +5° 38′. It will be seen that the reference stars are at some distance from the centre of the plate, so that their positions may be to some extent affected by optical distortion. As, how-

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ever, the planet is within 5′ of the mean position of the reference stars, and very near the centre of the field, the effect on its position would be very small.

Royal Observatory, Greenwich:
1899 *January* 21.

Note on the Photographs of the Satellite of Neptune taken with the 30-inch Reflector and 26-inch Refractor of the Thompson Equatorial.

(*Communicated by the Astronomer Royal.*)

Photographs of the satellite of *Neptune* have been taken as follows :—

Date.		Instrument.	Exposure.
1898 Dec.	23	30-inch reflector.	4^m and 2^m.
1899 Jan.	1	,, ,,	5^m and 4^m.
,,	5	26-inch refractor.	21^m.
,,	9	,, ,,	14^m.
,,	9	30-inch reflector.	5^m, 4^m and 3^m.
,,	10	,, ,,	5^m, 4^m and 3^m.
,,	11	,, ,,	5^m, $3\frac{1}{2}^m$ and 2^m.

These photographs give good images of the satellite well separated from *Neptune*. As yet only three of the photographs have been measured, pending the adaptation of a micrometer which was formerly used for the measurement of solar photographs.

The images of *Neptune* with the reflector vary from 10″ to 15″ in diameter. Those with the refractor are about 18″ in diameter.

[Since the date of this note an occulting screen has been adapted to the plate-holder of the 26-inch refractor, so that short exposures can be given for the planet during the long exposure for the satellite, and thus an image of *Neptune* of very small diameter has been obtained, the exposure on the satellite being 20^m, so that the position angle and distance can be measured with great accuracy.]

Royal Observatory, Greenwich:
1899 *January* 11.